EU Attempts to Lift Arms Embargo on China and the Security Balance in East Asia: Implications for East Asian Integration*

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Observe coolly; react calmly;
solidify our foothold; never reveal our talents;
strengthen our defense; and never take the lead.
-- Deng Xiaoping

Abstract

This paper examines whether arms embargos are a necessary and effective tool to maintain the balance of power in East Asia. This study argues that despite the fact that the international arms embargo, including that of the EU, on China remains intact, the balance of power in East Asia is already changing in favor of China. First, the paper briefly examines the EU attempts to lift its embargo, describes the current situation, and outlines future prospects. Second, it reviews China's military budget, military capabilities, research and development expenditures, and technology transfer from Europe.

1. Introduction

East Asian integration is an enormous and ambiguous project whose scope and limits can be difficult to determine. Nonetheless, sound Sino-Japanese relations are a keystone to successful implementation of an integration process in the region. Leaving aside economic calculations and discourse on history and how they affect the prospects of integration in this region, this paper delves into the realm of security, specifically into the arms embargo on China imposed by the European Union（EU）, and discusses whether the lifting of the embargo would affect the balance of power in East Asia.

The EU argues that ending the arms embargo would not affect the regional security environment, but the United States and Japan insist that it would cause a shift in the balance of power in East Asia. Beijing has been arguing that the arms embargo is a remnant of the past[1] and that it is used as political leverage against China. From the debate on this issue it is clear that while for Japan and the United States this is a matter of hard security, for the EU it is a matter of trade and concrete steps towards the establishment of a multilateral world.[2]

The EU has not attempted to lift its embargo. On the contrary, it calls on China to improve its human rights conditions in the country, especially after Beijing passed the anti-secession law in March 2005（clearly aimed at Taiwan）and during the escalation of the situation in Tibet and worsening Beijing-Lhasa relations before the Olympic Games in 2008.[3]

This paper examines whether arms embargos are a necessary and effective tool to keep the balance of power in East Asia. It presents a twofold argument:（1）even though the EU arms embargo on China remains intact, the balance of power in East Asia is already changing in favor of China; and（2）East Asian cooperation or integration in political and security terms would be impossible unless and until China's military spending becomes transparent and its military intentions become clear. To support this argument, this paper briefly examines the EU attempts to lift

its embargo, describes the present situation, and outlines some future trends. Secondly, it looks at the trends in China's military budget, military capabilities, research and development expenditures, and technology transfers from Europe.

To address the above issues this paper uses International Relations theory, specifically the Realist and the Constructivist approach. In the author's opinion, Realism is most applicable for this study inasmuch as there are not many liberals or constructivists among the decision-makers in the institutions relevant to this study, such as the European Commission, Ministry of Foreign Affairs of Japan, Pentagon, etc. In addition, the Constructivist approach makes it possible to interpret security in a wider scope, as an area not strictly limited to considerations of military power and performance.[4] Moreover, through this approach it is possible to point out and analyze some problems in the security dialogue that are not discernible from a strictly Realist vantage point and to suggest some policy measures, keeping in mind that benefits of cooperation are not always material.

In this analysis the author uses a variety of primary documents, interview materials（with Japanese and European officials）, and secondary sources revealing the policy practices of China and the relationship and activities between the EU, China, the United States, and Japan, as well as their individual and joint policy practices. The issue of the EU arms embargo against China was discussed in the works of Nicola Casarini, Marcin Zaborowski, Jonathan Holslag, Ting Wai and others.[5] However, to the author's knowledge, there has not been a paper focused exclusively on this issue from the perspective of integration in East Asia and therefore this article can be regarded as a case study to explore the potential impact of the presence or absence of an embargo on East Asian integration.

In this study, the terms "balance of power in East Asia" and "security balance in East Asia" are used interchangeably. The author deems this appropriate inasmuch as both terms reflect the issue of security in East Asia and how the regional powers（states）change the balance in East Asia.

2. East Asian Regional Integration

One of the most remarkable developments in the second half of the 20th century was the economic transformation that occurred in parts of Asia. In Northeast Asia in particular, a process of industrialization and rapid economic expansion took hold that gradually spread to other parts of the region.[6] However, it is important to emphasize that "Asia" is a strikingly diverse place, and that some parts – the Central and Southern parts, for example – generally have not enjoyed the sort of economic growth rates that have attracted much attention from the scholarly and policy-making communities. As a result, scholars regard East Asia, which includes Japan, China, South Korea, Taiwan, Hong Kong, and the countries of the Association of Southeast Asian Nations（ASEAN）as a region for integration for it was here that the conventional wisdom about the possibility of, and the preconditions for, economic development outside the "core" industrialized economies of Western Europe and North America was fundamentally challenged.[7]

Yet, until recently Asian regional cooperation has been much narrower in character and based on largely instrumental considerations, focused on modalities and institutional mechanisms, rather than the issues of identities and interests to be shared by parties to regional cooperation. Consequently, regional cooperation and plans for regional integration are far more fragile in East Asia than in Europe, where to a considerable extent the decision on integration rested on a common sense of identity and shared values. While trade and investment opportunities are the basis for economic integration, all forms of integration needing stronger regional, supranational or intergovernmental institutions are only possible after the development of a strong, regional identity. Such an identity, however, cannot be constructed by state action, but rather has to de-

velop on the basis of shared values and interests.

Economic development everywhere is constrained or encouraged by specific historical factors. Thus, whereas trade and finances seem to be the most successful domains of East Asian integration, political integration in the region has been considerably limited. The emergence of China as a major economic and political force in the region may accelerate regional integration at a number of levels. Yet even if it does, "East Asia" is likely to be characterized by continuing variations in the level of economic development and political influence enjoyed by the very different countries of the region, such that the differences may make political and economic integration more difficult than it has been in other parts of the world.

East Asian governments are keenly sensitive to shifts in the military balance, and are actively engaged in building international institutions in order to improve coordination on issues such as trade and the environment. However, the ways in which Asian nations in the region perceive and respond to these threats and opportunities are strongly conditioned by the manner in which these issues are defined in the context of their domestic political cultures. Moreover, there exist various domestic cleavages in the Asia Pacific region surrounding issues of national identity (e.g., Taiwan and Korea) and historically driven animosities (as between the PRC and Japan, and between Japan and South Korea) that sharply limit the prospects for cooperation and threaten to destabilize regional security. Above and beyond these obstacles, Thomas U. Berger notes, "Chinese, Japanese, Korean, and Taiwanese elites come to institutionalize an approach in foreign policy which emphasizes economic over security issues, albeit in each case these approaches were based on very different underlying ideational-cultural understandings and emerged under very different circumstances."[8]

The primary source of tensions that trouble the East Asian region today is rooted not in the geo-strategic environment, level of political and economic development, or the character of international institutions in which regional states are embedded. Rather it is the product of deep-rooted historically based suspicions and animosities, frustrated nationalism and distinct conceptions of national identity, and differing understandings of the national mission in international affairs.[9] As this paper demonstrates, the EU attempts to lift the arms embargo on China as a litmus paper reveal how historical memory, security concerns, and lack of trust between Japan and China hamper East Asian regional integration.

3. The Arms Embargo Issue: History and the Present Situation

The EU imposed an embargo on arms exports to China in 1989 after the Tiananmen Square incident. Then in 2003, when the security issues were either absent or certainly not at the forefront of European considerations, it decided to re-consider this issue due to global changes that had taken place since 1989.[10] In addition, in 2003 the EU and China agreed to form a strategic partnership. Europe saw China as a new potential partner in forging a multilateral world order.[11] The strategic partnership with China and lifting the arms embargo were attempts to counterbalance US unilateral policy especially in the light of the outbreak of war in Iraq. In December 2003, during the Italian Presidency of the European Council, the European Commission and institutions concerned were given a mandate to "re-examine the question of the embargo on the sale of arms to China."[12] Ex-president of France Jacques Chirac and ex-chancellor of Germany Gerhard Schroeder were particularly enthusiastic about lifting the embargo, as it might facilitate arms sales to China, although they argued that they were not going to export high-tech weapons. In June 2004 during the Irish Presidency, the European Council invited "the Council to continue its consideration of the arms embargo in the context of the EU's overall relations with China."[13]

The European plans, however, led to a sharp criticism from Japan and the Unites States.

Australia also opposed the EU decision.[14] Japan strongly opposed this attempt arguing that it would affect the "delicate East Asia security balance.[15] In the United States, both the Republicans and the Democrats argued that the proposal to lift the arms embargo was a cynical ploy to open doors for the European defense industry and that, even if arms sales remained limited, the EU was casting aside more than a decade of human rights concerns for economic gains.[16] The US House of Representatives passed a resolution condemning the EU's moves toward lifting its arms embargo on China. The resolution alleged that lifting the ban could destabilize the Taiwan Strait and put the US Seventh Fleet at risk. Moreover, the US policy-makers adopted a series of initiatives clearly indicating the US opposition to the lifting of the embargo and some of them warned that if the EU ignored US security concerns the United States would place restrictions on technology transfers to EU member states.[17] The US warning was a threat for European defense companies since they were still largely dependent on US defense technologies, not to mention the importance of the US market for them. American retaliation could have taken the form of sanctions targeting specific defense contractors that sold sensitive military-use technology of weapons systems to China. Undoubtedly, the potential for US restrictions on technology transfers to Europe was a serious consequence for the European defense industry.

It could be argued that the main mistake the European Union made was the absence of prior consultations with the United States on the embargo issue. It was only after the public announcement of the European Council on the embargo issue that Annalisa Giannela, Javier's Solana Personal Representative on Non-Proliferation of Weapons of Mass Destruction, visited the United States, Japan, Australia, and other concerned countries to explain why the Europeans were considering lifting the EU arms ban on China.[18] This attempt to end the embargo weakened relations of the EU with the United States. Moreover, it affected the image of the former as independent and unified in the eyes of China.

To improve the situation the European Council in December 2004 stressed that a revised and stricter Code of Conduct would be put in place. Adopted in 1998, the EU Code of Conduct on Arms Exports laid down eight criteria against which member states would assess applications to export military equipment. Several of the criteria took into account concerns expressed by some partners of the EU, especially the United States.[19] In October 2005, the EU member states adopted a *User's Guide to the EU Code of Conduct on Arms Exports* designed to help member states (especially export licensing officials) apply the Code of Conduct.[20] Yet, the Code of Conduct was not legally binding and the Council in its Sixth Annual Report of the EU Code of Conduct on Arms Exports declared that a number of EU member states had partially sidestepped the embargo by supplying China with components for military equipment, particularly engines for aircraft, frigates, and submarines. Moreover, the Council's Sixth Annual Report showed that the value of licenses for arms exports to China increased from 54 million euros in 2001 to 210 million euros in 2002 and 416 million euros in 2003. France, Germany, Italy, and the UK accounted for almost all of the sales.[21] Thus, notwithstanding the embargo, some EU governments were able to sell components for arms and the European Parliament urged to make the Code of Conduct legally binding on all EU member states.[22]

Though officially not legally binding, the embargo remained intact and after the 2005 elections in Germany (Angela Merkel became Chancellor). Attempts to lift European arms embargo on China have actually disappeared from the European agenda. In the meantime, it also became clear that the European and American security perspectives on China are not identical. Indeed they are increasingly divergent. Recently the continuing development of the EU as a global security actor as well as European security interests and the expansion of China's interests overlap in some areas and regions (Africa, Middle East).[23] As it will be demonstrated below, such overlapping of interests has not brought awareness to the European side that China has become a global power and represents both opportunities and risks inasmuch as European

companies continue exporting technologies to China as they are attracted to Chinese markets.

Being directly involved in the maintenance of balance of power in East Asia, especially with regards to cross-straits relations, the United States and Japan have acted in a much stricter manner towards mainland China to avoid an arms race between Beijing and Taipei.

For the Europeans, the United States remains staunchly opposed to any policy change on the embargo and the EU is concerned about making a move that could undermine the post-Iraq transatlantic *rapprochement*. However, the importance of transatlantic considerations in this decision seems exaggerated if not misjudged, notes Marcin Zaborowski. Zaborowski continues, "After all, America's other close allies Israel and Australia are selling arms to China, which so far has not led to any major friction in Washington's relations with these states.[24]" Yet, according to SIPRI, neither Israel nor Australia sells weapons to China today. Israel made its last transaction in 2001.[25]

With Japan and the United States on one side and Europe on the other, both actors looked differently at the issue of arms embargo against China. While for Europe lifting the arms export ban is connected with human rights and the multilateral world system, for Japan and the United States it is a matter of hard security.[26] When the word "China" is mentioned in Europe, the first reaction that a European would have is "violation of human rights," not "threat to own security." Herein lies the main divergence in the two sides' views on China, its military budget, and capabilities.

In the meantime China presents three risks.[27] The first risk is a threat to China's immediate neighbors, i.e., hard security. The second is the export of Chinese arms models abroad. There are already some precedents such as Sudan and Zimbabwe. On the one hand, China does not interfere into the domestic politics of other countries. On the other hand, it exports its military model ignoring the issue of human rights and democracy. The third risk China presents is environmental and economic. The Europeans are concerned with the second and the third risks inasmuch as they relate to their interests in Africa and around the globe. At the same time, as Japanese diplomats note, Europe does not take seriously the security environment in East Asia.[28] Unfortunately this author has not been able to access any sources that could shed light on the progress of the East Asia Strategic Dialogue between the EU and Japan launched in 2005. For the Europeans it is a forum to exchange opinions and understand each other's positions on security balance in East Asia not necessarily leading to operational conclusions,[29] while the Japanese do not consider this dialogue very effective since everybody holds on to its own position and is not ready to change it.[30]

Moreover, Japan does not believe that there will be transparency in China's military budget.[31] At least it does not expect that it will be achieved in the near future. As such, Japan has made steps towards closer cooperation with China, but China remains a non-transparent country in terms of military spending. In addition, Japan views China as a rising and non-transparent country with a big population, big territory, one-party control, and a strong army.[32] Japan's main concern vis-à-vis China is to know the true intention of the modernization process of China's army.[33]

Europe assumes that economic cooperation will foster convergence on other issues as well. By increasing China's dependence on European capital, consumers, and technologies, Europe wants to achieve a spillover of influence into other domains. This liberalist approach implies that interdependence will make China automatically a responsible stakeholder in world peace and stability. Moreover, developing China as a trading nation is also expected to promote an internal evolution that will help weaken the germs of nationalism and xenophobia. Aside from this rather spontaneous fine-tuning, commercial ties permit active steering as well. As China's development relies increasingly on Europe, economic sanctions and cooperation become more powerful tools for influencing China's transition. Thus, economic, political, and societal ties are sought to smooth differences in other domains, but the growing relationships are also expected to add

to Europe's active-steering capacity.[34] However, such active entrepreneurial approach of Europe has created a situation where Europe is starting to fear the resurgence of China where it infused substantial investments, aid, political efforts, and patience, but whose military spending remains non-transparent and military ambitions unclear.[35]

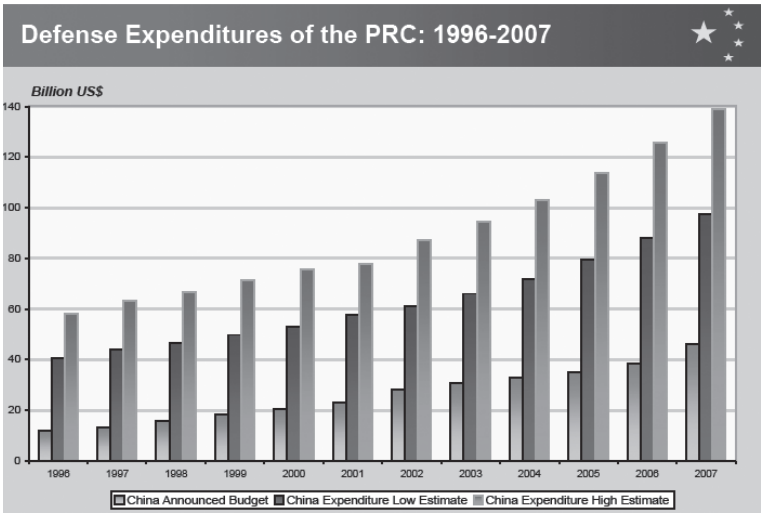
Officially the EU embargo remains intact, but there are some cases of weapons sales from EU member states (namely France, Italy, and the UK) to China. We may say that the United States and Japan uphold a realist approach and oppose the lifting of the embargo while the EU advocates a liberal view on relations with China in the military sphere. Now let us examine China's military budget and capabilities.

4. China's Current Trends

China's Military Budget

In 2008 China's defense budget increased by 17.6 percent to $59 billion (Figure 1), which is 1.7 percent of China's GDP, and $45 per capita. Jiang Enzhu, a spokesman for the National People's Congress, said that the 2008 budget would fund only a "moderate increase" in weapons purchases. He noted that most of the additional funds would go toward higher military salaries, rising oil costs, and training programs. He added that the country has a long-standing plan to modernize its forces.[36] From 2003 to 2007, China's national defense spending increased by an annual average of 15.8 percent, while the government revenue increased by an annual average of 22.1 percent.[37] Hence, China argues that its military budget is mainly spent on army modernization and on salaries. However, Beijing does not specify the number and type of People's Liberation Army (PLA) armaments, which causes speculation in other countries, especially in the United States.

Figure 1. Defense Expenditures of China, 1996-2007



Source: Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2008*, p. 29. The graph depicts China's official defense budget since 1996, and associated Department of Defense estimates of actual defense expenditures. Announced budgets are from State Council announcements during the annual National People's Congress meeting. Department of Defense estimates include projected expenses for strategic forces, foreign acquisitions, military research and development, and paramilitary forces. All figures are in 2007 US dollars.

The United States estimates China's military expenditures for 2008 at $97-$139 billion, where the higher estimate is around 4 percent of China's GDP. Regardless of the exact figure, officials from the Pentagon intelligence service believe that the Chinese defense budget remains the second largest in the world. The Japanese Ministry of Defense shares concerns over the lack of transparency regarding China's military budget. The Pentagon reported that China's near-term focus remains on preparations for potential problems in the Taiwan Strait. Moreover, China's nuclear force modernization, its growing arsenal of advanced missiles, and its development of space and cyberspace technologies are changing the military balance in Asia and beyond.[38] Accordingly, though the arms embargo against China remains intact, the security balance in East Asia is already changing in favor of China.

The US Department of Defense argues that the resources for PLA modernization include domestic defense expenditures, indigenous defense industrial development, dual-use technologies, and foreign technology acquisition – all of which are driven by the performance of the economy.[39] As China's defense industries develop, the PLA is relying on acquisition of foreign weapons and technology, primarily from Russia, to fill near-term capability gaps. China also harvests spin-offs from foreign direct investment and joint ventures in the civilian sector, technical knowledge and expertise of students returning from abroad, as well as state-sponsored industrial espionage to increase the level of technologies available to support military research, development, and acquisition. Beijing's long-term goal is to create a wholly indigenous defense industrial sector able to meet the needs of PLA modernization as well as to compete as a top-tier producer in the global arms trade. China is already competitive in some areas, such as communications with leading international defense firms.[40] I will argue in the following section that the primary goal of China is to develop a domestic space industry that would allow China to achieve hegemony both in civilian and military domains. That being said, the United States regards China's modernized PLA as already a competitor to the US army in communications technologies.

At the same time, a slightly different take comes from the Stockholm International Peace Research Institute（SIPRI）, which placed China behind the United States and Britain in total defense spending in 2007, but 2nd to the United States in purchasing power parity at $140 billion to Washington's $547 billion.[41] According to SIPRI estimates, China's military expenditures in 2007 reached $58.3 billion, which is 5 percent of world total military expenditures.

The modernization and growth of China's People's Liberation Army（PLA）does not raise the same concern in the EU as it does in the United States. The EU recognizes that China's rise must inevitably be reflected in the military and defense spheres. However, while the growth of China's military spending does not alarm the Europeans, Brussels is increasingly concerned about the lack of transparency in this process. In particular, the EU is skeptical about the actual level of the PLA's budget and its military objectives. Consequently, the EU has taken steps to develop its capacity to assess the PLA and China's defense policy.[42] While the US debate remains focused on the rapid growth of China's defense spending, the Europeans point out that even if China spends twice as much as it declares, this is still a small fraction of the Pentagon's nearly $500 billion budget.[43]

Unfortunately, the author has not been able to obtain current information on European assessments of China's military defense budget, but it is clear that the EU does not view China's defense spending with as much sensitivity as the United States. Europeans take the increase of China's military budget as a necessity to modernize the PLA. Contrary to the United States, the Europeans are worried not so much about the increase of expenditures as about the lack of transparency in the military budget. While China explains its increased military budget in terms of rising oil costs and training programs as well as increased military salaries, the United States regards China's domestic defense expenditures, along with indigenous defense industrial development, dual-use technologies, and foreign technology acquisition as the main sources for the

PLA's modernization. This modernization process includes the enabling of China's modernized nuclear force, advanced missiles, and space and cyberspace technologies which have the real potential to contribute to a change in the balance of power in East Asia.

China's Military Capabilities

China's military budget is directly linked with China's military capabilities. Due to the lack of transparency in the military budget it is hard to estimate China's military capabilities. As mentioned above, Beijing declares that China's defense expenditures mainly comprise expenses for personnel, training and maintenance, and equipment. Personnel expenses mainly cover salaries, insurance, food, clothing, and welfare benefits for officers, non-commissioned officers and enlisted men, as well as for civilian employees.[44] Training and maintenance expenses cover troop training, institutional education, construction and maintenance of installations and facilities, and other expenses on routine consumables. The equipment expenses mainly cover research on, experimentation with, and procurement, maintenance, transportation, and storage of weaponry and equipment. The defense expenditures not only cover the active forces but also the militia and reserve forces. Also covered by the defense budget are costs to support part of the retired officers, education of servicemen's children and the national economic development, as well as other social welfare expenses.[45] However, China does not provide specific details on the number and type of PLA armaments and maintenance schedules, nor the alignment of units, troop movements, training records or defense spending.[46]

Beijing realizes that the Chinese army must import advanced weapons and military technology from other countries through "military diplomacy," which envisages military exchange, cooperation with the neighboring countries and regions, and China's involvement in global security to build a stable and favorable international security environment. China feels strongly that it must actively proceed with a "revolution in military affairs (RMA) with Chinese characteristics." To achieve the RMA, it is faced with the task of the "informationization" of the PLA. However, the "mechanization" of the PLA to strengthen the mobility and protection of PLA units is still less than complete. After witnessing the first Gulf War and the Kosovo War, in which precision guided weapons were extensively employed, China realized that major conflicts in the 21st century would be "information warfare," and that their outcome would be determined by C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) capabilities as well as by advanced space technologies.[47] With this in mind, the PLA set the "dual-historical task" of simultaneous mechanization and informationization. The Afghanistan and Iraq wars impressed the leadership of the PLA with the level of informationization involved. It was reflected in the Chinese defense white paper, *China's National Defense in 2006,* which declared, "the strategic goal of building informationized armed forces and being capable of winning informationized wars by the mid-21st century."[48]

We can conclude that the PLA is pursuing its goal by means of science and technology. It works to accelerate change in the generating mode of war fighting capabilities by drawing on scientific and technological advances. The PLA seeks to raise its capabilities of independent innovation in weaponry and equipment, as well as defense-related science and technology, and strives to make major breakthroughs in some basic, pioneering, and technological fields of strategic importance. It is stepping up its efforts to build a joint operational command system, training system, and support system for fighting informationized wars and enhance the building of systems integration of services and arms.[49]

Taking the above into consideration, we can see that lifting the EU arms embargo on China would potentially allow China access to military and dual-use technologies that would help it improve its current weapons systems. Moreover, due to the fact that certain arms and technologies have been transferred by European countries despite the embargo, China could have started

working on its future advanced weapons systems. Ending the embargo could also remove implicit limits on Chinese military interaction with European militaries, giving China's armed forces broad access to critical military "software" such as management practices, operational doctrine and training, and logistics expertise. Moreover, if the embargo were lifted, China's strategy would likely centre on establishing joint ventures with EU companies to acquire expertise and technology.[50] Nevertheless, in the medium to long term, China is likely to be interested in acquiring advanced space technology, radar systems, early-warning aircraft, submarine technology, and advanced electronic components for precision-guided weapons systems.

Since the 1990s China has been modernizing its conventional weapons arsenal. In 2006-2007 China decreased the import of military weapons by 62 percent.[51] China imported helicopters, radars, airplane engines and missiles, as well as Kilo-type submarines（Figure 2）.

Figure 2. Russian Arms Sales to China, 2001-2005

Equipment	Year	Quantity
Su-30MKK aircraft	2001	38
Kilo-class submarines	2002	Up to 8
SOVREMENNYY II-class destroyers	2002	2
S-300PMU-1 surface-to-air missile system	2002	4 battalions
Su-30MK2 aircraft	2003	24
S-300PMU-2 surface-to-air missile system	2004	8 battalions
AL-31F aircraft engines for the F-10 fighter	2004	100
IL-76 transport aircraft	2004	10
RD-93aircraft engines for the JF-17 fighters	2005	100
IL-76 transport aircraft	2005	40
IL-78 tanker aircraft	2005	8

Source: Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2006,* p. 21. Note: Quantity indicates numbers of units in the purchase agreement. Actual deliveries may be spread across several years.

Simultaneously, China assembled airplanes under Russian license. All in all, China will need Russian military equipment less and less. Meanwhile, according to SIPRI researcher Paul Holtom, "[T]he defense industry of China is developing due to import of license and equipment from Russia, which allows China to increase its own production."[52] At the same time Moscow fears that its military products would be copied by China. For instance, Russia exported Su-27k and China now has a very similar airplane, J11B. In its air force, China possesses more than 150 SU-27s, SU-30s, and possibly SU-33s. In the naval force, China bought Kilo-class submarines and Sovremenny II-class destroyers. Thus, first because of copyrights, Russia is not in a hurry to export more weapons to China. Second, China has almost re-modernized its army and therefore it does not need more units of weapons from Russia. Therefore, it can be expected that Russia's exports to China will decrease in the coming years. In addition, to counterbalance China, Russia also sells its weapons to India, which makes China very unhappy.

The most noticeable development in the overall balance of air warfare capabilities in Northeast Asia is China's increased deployment of Su-27 and Su-30 fourth-generation fighters. In sheer numbers of fourth-generation fighters owned, China already rivals Japan and may take the lead in the near future.[53] If that happens, the balance in air power will greatly shift in China's favor, with Japan losing the qualitative superiority it has so far enjoyed. As such, the regional strategic balance is changing, and this is a critical concern for both Japan and the United States.[54]

In addition, Japan and the United States are the only countries that operate full-scale airborne warning and control system（AWACS）capabilities in East Asia, and the qualitative strategic superiority enjoyed by both nations largely derives from those capabilities. However, some security experts hold that it is only a matter of time before China puts full-fledged AWACS capabilities into operation.[55]

Finally, from a global perspective lifting the EU arms embargo could accelerate weapons proliferation to countries that the EU wants to remain isolated. Beijing's track record in transfers of conventional arms and military technologies suggests EU or other third-party sales to China could lead to improvements in the systems that Chinese companies market abroad, including to countries of concern（in the Middle East and Africa）. Hence, for the United States and Japan the main concern about China is a discrepancy between what it declares and what is really pursues. The problem of transparency complicates the situation around the PLA's capabilities as well as around the lifting of arms embargo.

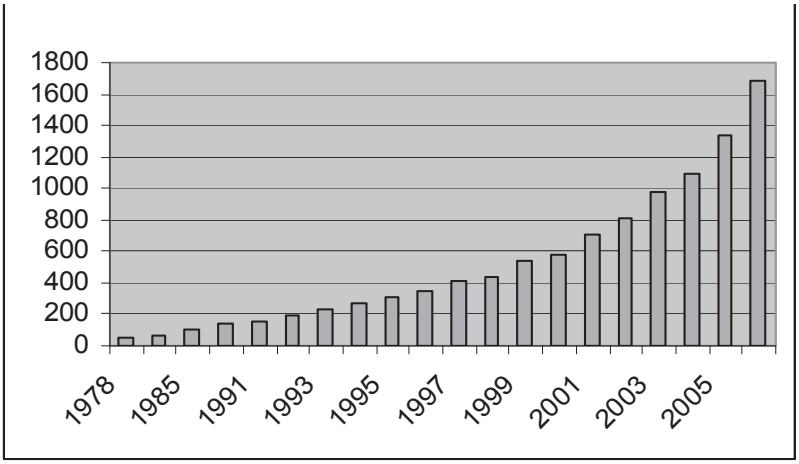
From a market viewpoint, lifting the EU embargo would also lead to greater foreign competition to sell arms to the PLA, giving Beijing leverage over Russia. To secure its share on the Chinese defense market, presumably the United States would start selling weapons to China too. As a consequence, China could be very selective in the weapons it could buy to finish remodernizing its army, and according to strategic developments, it could export arms itself（it may have potential customers in Africa and Central Asia）.

As demonstrated above, even despite the embargo remaining intact, the security balance in East Asia is already changing in China's favor especially in communication technologies, and possibly even in air warfare technologies. China's primary goal is acquisition of advanced technologies, including space technologies. Now we will examine what China does in the area of research and development.

China's R&D Expenditures and Research Centers

During the Cultural Revolution scientists and scholars, and science and technology were oppressed. At the 4th National Conference on Science and Technology in 1978, Deng Xiaoping made clear that along with industry, agriculture, and army, science and technology would be the fourth pillar of modernization.[56] Since then, the expenditures on R&D have been gradually increasing（Figure 3）. Although not considerable in terms of GDP ratio, we have seen an increase from 0.6 percent in 1995 to 0.8 percent 2006.

Figure 3. China's Government Expenditures for Science and Research, 1978-2006（100 million yuan）



Source: *China Statistical Yearbook 2007,* http://www.stats.gov.cn/tjsj/ndsj/2007/indexeh.htm.

In 1978 the slogan "Science and Technology is the leading productivity power" emerged.[57] After the announcement of three reforms (state enterprises, financial, and administrative) and in order to expand employment opportunities for China's growing population, an emphasis was placed on the development of private business in the high-tech sector. Later, in addition to traditional high-tech, China set up high-tech companies in information technology, biotechnology, and pharmaceuticals.

In 2006 the State Council of China adopted the Guidelines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020), which stated, "[B]y 2020, the progress of science and technology will contribute at least 60 percent to the country's development. Meanwhile, the country's reliance on foreign technology will decline to 30 percent and below."[58] Thus, instead of dependence on imported technologies, China is going to rely increasingly upon its own resources. According to the Guidelines, China will encourage enterprises to spend more on research and development while state financial investment will be used mainly to develop basic research.

The 2006 Guidelines defined the priority sectors for technological development. These key industries were energy, waters resources, mining resources, the environment, agriculture, manufacturing, communications and transport, information industry and modern service industries, population and health, urbanization and urban development, public security, and national defense. With regard to national defense, it is envisaged that "China will reform the current scientific and technological management system and combine and coordinate the military and civilian research organizations."[59] China encourages military organizations to shoulder the tasks of scientific research for civilian use. At the same time, civilian research institutes and enterprises are also allowed to take part in national defense research projects.[60]

China possesses considerable economic and human resources to implement its strategy. It welcomes the establishment of research centers and even provides a favorable tax regime for them. It is also concerned with brain drain and prefers scientists and researchers not to leave the country. As a result, China is creating appropriate conditions and incentives for domestic centered research.[61] In fact, China has no shortage of well-trained scientists, engineers, mathematicians or other technical experts. A considerable number of Chinese scholars educated abroad over the last two decades are working on key research projects in China, applying both knowledge and high technologies to conduct research independently or in cooperation with foreign colleagues. Nowadays China's research and development is especially active in nuclear power energy, space industry, high energy physics, biology, computer science, and electronic communications, where China has attained or is approaching advanced levels. Such tremendous development cannot but worry its foreign counterparts from the viewpoint of competition.

To conclude, China's primary goal in the military area is to have advanced space technologies. China and the EU have agreed to open their research programs to accommodate the increasing number of joint research projects. More and more Chinese have been invited to participate in the EU-funded 7th Framework Program for Research, Technology Development, and Demonstration Activities (RTD) for the period 2007-2013 and China is attracting Europeans into projects under its research programs.

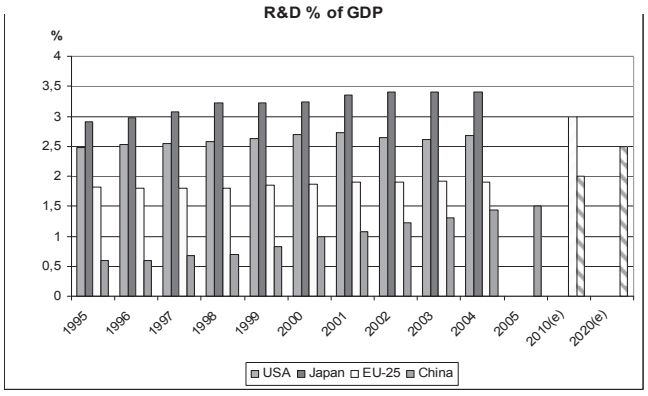
Sustained increases in expenditures for research and development, establishment of research centers, granting of a favorable tax regime to these centers, and joint R&D projects with foreign institutions and states provide a sound basis for China's aspiration to become a major exporter of technologies in the future. Moreover, since Beijing is uniting civil and defense research, it would not be hard for China to produce and export its own advanced weapons. Obviously, the emergence of China as an arms exporter would restructure the world weapons market. In order to achieve its goals as fast as possible, China is active in importing advanced technologies. In the next section we are going to look at European technology transfer to China.

European Technology Transfer to China

It is obvious that in an increasingly globalised economy China is likely to depend on its capacity to maintain and develop its comparative advantages in advanced technology goods. The Chinese government has emphasized the need for FDI to be coupled with the transfer of more advanced foreign technologies to China.[62] In an effort to develop high-tech industries, Chinese policies on import of foreign technologies have become increasingly selective and restrictive in the type of imports and investments that are allowed or officially encouraged. In particular, there has been an increasing emphasis on industry-specific investment and high-technology imports. As a result, China has become the world's first exporter of information technology products, although, as discussed earlier, the large proportion of these exports come from foreign companies established in China that import research-intensive, high value-added components.

Innovative technologies are tools to implement successful strategies to stay competitive on the world market. In 2006 the European Parliament acknowledged, "China has tripled its expenditure on research and development in the past five years... Europe must rise to this challenge in order to continue to benefit from world trade in future"[63] (see Figure 4).

Figure 4. R&D Expenditures in GDP in China, Japan, EU, and USA



Source: MEXT, *Indicators of Science and Technology 2005*.

As demonstrated herein, research and development is relevant not only to trade and competitiveness in the world but also to security, i.e., sophisticated weapons, social expenditures, and the competitiveness in many areas, not exclusively trade.

All in all, access to China's attractive market is often used as a leverage to get foreign partners in larger joint ventures to provide their technology on terms that most Western companies would not be ready to accept anywhere else.[64] By purchasing high-tech goods off the shelf, China does not have to pass through the development process itself. However, the government is also more actively promoting technological development and knowledge.[65] Thus, in its EU Policy Paper, Beijing appeals to Europe to ease restrictions on high-tech exports, and vows to tap the enormous potential of technological cooperation.[66] The Chinese side would like to see EU participation in IT promotion. Space technology, high energy physics, polar exploration and development, the life sciences, biotechnology, bio-diversity, resources, environment, and human health are other major areas of interest to China. China has succeeded in plugging into European expertise in several of these fields. In terms of technology transfer, EU countries already are China's biggest supplier of technologies and equipment.[67] By the end of September 2004, China had introduced 18,363 technologies from the EU with a contract value of $79.4 billion.[68]

Let us now turn to a brief review of how actively China and Europe cooperate in science and technology. To start with, in September 2003 China joined the European satellite navigation project Galileo contributing 230 million euros. As a natural consequence, this led to technology

sharing between Europe and China, which allows China to develop satellite guided navigation technology by Chinese domestic industry. Moreover, China's goal is to obtain military superiority in space, which is a key element to achieving operational objectives of the PLA. Although most of China's space programs have mainly commercial and scientific purposes, improved space technology has the potential to significantly improve Chinese military capabilities.[69] The European side rejects American worries that China could gain a military advantage from Galileo. The European Commission argues that the Public Regulated Service（PRS）would be withheld from China and any other non-EU participants in the system. The PRS is an encrypted signal, meant to guarantee continuous signal access in the event of threats or crisis. Unlike other Galileo signals, the PRS will be accessible even when the other services are not available, making it suitable for security- and military-related uses.[70] Yet, as Nicola Casarini acknowledges, "there is still a fair amount of unpredictability as to what China will be able to use – or not to use – in the end. However, in any case research work on Galileo will assist China in fostering the development of its own, independent satellite navigation system. In fact, as already happened in the past, China will almost certainly be able to use foreign technology to upgrade its indigenous space capabilities."[71]

Secondly, France, Germany, and the United Kingdom lobbied hard to convince Beijing to purchase Airbus aircraft instead of its American rival Boeing to secure the share of China's rising defense budget.[72] The partnership of Airbus, whose corporate parent is European Aeronautic Defense and Space, with China dates to 2005, when the company opened a design center in Beijing. In June 2006, Airbus agreed to set up an A320 assembly line in Tianjin. That line, which is still under construction, is expected to make about four planes a month by 2011. In November 2007 Airbus received orders from Chinese airlines for 160 passenger planes worth about $14.8 billion. In return, Airbus promised "to award to Chinese companies at least 5 percent of the supply contracts for its next-generation widebody jet, the A350-XWB."[73] Outside of the Euro-zone, such a jet was only offered to Russia.[74] Airbus said it would involve its Chinese partners in the development of the 300-seat A350 plane in Harbin, where the site is expected to be ready in 2009. Airbus said that its initial guarantee of 5 percent of the work "may be enlarged based on the future business plan." In addition, Airbus signed a memorandum of understanding with the National Development Reform Commission that granted risk-sharing supply contracts to Chinese manufacturers for many of the A350's moving parts, including wing flaps and tail rudders. Hence, Airbus has increasingly offered China projects that over time will make Chinese producers critical suppliers of components and sub-assemblies for some of the most important Airbus products.[75]

Thirdly, French nuclear company Areva won an $11.9 billion agreement to build nuclear reactors as well as to supply technology and uranium to China in an attempt to reduce its dependence on coal. Areva is expected to build two third-generation reactors at Taishan in the southern Chinese province of Guangdong under a contract with China Guangdong Nuclear Power. In response, the Chinese company agreed to buy 35 percent of the production of Areva's uranium-mining subsidiary, UraMin, which plans to obtain nuclear fuel from its three mines in Africa. In addition, Europe and China could become long-term partners in nuclear fuel processing after Areva signed a separate deal with the China National Nuclear Corporation to study whether to build a reprocessing plant for spent fuel.

Finally, the telecommunications equipment maker Alcatel-Lucent, the engineering group Alstom and the utility groups Suez and Électricité de France also have large contracts in China. Alcatel-Lucent, the world's biggest maker of telecommunications gear, received orders worth 750 million euros to expand the networks of China's two largest cell phone carriers. The French utility Suez signed agreements with two cities, Chongqing and Tianjin, for water and waste management services, while the engineering group of Alstom received a contract worth 43 million euros to supply electronic equipment for the subway system of Shanghai. Eurocopter, a division of

EADS, was expected to sign a contract with China's military for 10 helicopters worth 80 million euros.

The above-mentioned cases confirm the value of China as a market for European technology despite tensions over human rights, trade, and the environment. To generalize, the accumulation of the transferred technologies and their application in domestic research (without investing heavily in research previously done by Europeans, Americans or Japanese) means that little by little China is becoming or has already become a leader in R&D. As Nicola Casarini notes, "Europe has become over the years a source for advanced technology that would otherwise be more difficult (if not impossible) to obtain from the US or Japan."[76] Access to advanced technology not only ensures competitiveness over a medium to longer term, but it is also a prerequisite for the modernization of Chinese industry and by default army. Therefore, given the pattern of technology transfer between Europe and China, the practical impact of the embargo is highly questionable. Moreover, though Europeans want to establish a system where China depends on Europe, there is the other side of the "coin": Europe becomes increasingly dependent on China.

5. Conclusion

The EU attempts to lift arms embargo on China have a direct influence on the future of East Asian integration and limited impact on the security balance in the region inasmuch as it is already changing in favor of China. Firstly, in spite of the embargo some EU member states sell weapons to China. Secondly, unlike the United States and Japan, Europe does not consider increases in China's military expenditures as an alarming sign of its militarization. Therefore, it is quite skeptical about China's actual military expenditures and argues that still they are far from almost $500 billion Pentagon budget. Thirdly, in the US (and possibly European) estimations China's modernized nuclear force, advanced missiles, communication, space, and cyberspace technologies are changing the security balance in East Asia. Fourthly, China and the EU are actively involved in joint research projects, where Galileo is a most illustrative case. Constant increases of expenditures on research and development, establishment of research centers, and granting of a favorable tax regime to these centers provide a sound basis for China's aspiration to become a producer and exporter of both civilian and military technologies in the future. Finally, though being aware that R&D is closely connected with dual-use technologies and advanced weapons, Europe actively transfers production together with technologies to China as in the case of Airbus.

Given the scope of cooperation between Europe and China, the practical impact of the embargo on the balance of power in East Asia is doubtful. It should also be stressed that while the United States and Japan uphold a unipolar world led by the former, the EU attempts to counterbalance it by *inter alia* attracting China into the construction of a multilateral world order. However, the emergence of China as a global player with unclear intentions presents risks due to the lack of transparency related to military expenditures, changing military balance in East Asia, and the hasty and selective technology import.

The arms embargo is not the most effective tool to contain China and motivate it to improve the domestic human rights situation due to the extensive relations that exist between Europe and China and the other ways in which European technologies are introduced in China's defense area. The EU arms embargo on China is a litmus test on how the United States and Japan on one side and Europe on the other view China's military capabilities. Hence, until China's military spending becomes transparent and military intentions become clear, East Asian integration in political and security terms would be hardly realistic.

Moreover, despite the obvious economic interdependence and shared interest in prosperity

between Japan and China, historical memory, security concerns and, lack of trust between them hamper regional integration that would require the development of a regional identity based on mutual trust and transparency, and shared interests and values. Unless properly nurtured and further developed in a constructive and mutually positive way, contemporary Sino-Japanese relations would continue to be locked in the pattern of interdependence in economy and rivalry in politics and security, leaving no opportunity for ambitious integration plans in East Asia.

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